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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of : BRUECKHEIMER S et al
Serial No. : 10/803,215
Filed : March 18, 2004
For : ATM Communications System and
Method
Examiner : DUONG, Frank
Art Unit : 2616
Customer number : 23644
Confirmation NO. : 5835
Attorney Docket No. : 41319-95738

RESPONSE TO FINAL OFFICE ACTION MAILED JULY 9, 2008

Honorable Director of Patents and Trademarks
PO Box 1450
Alexandria, VA 22313-1450

Dear Sir,

In response to the final Office Action mailed July 9, 2008, applicant amends the application to accept the allowed claims as follows:

In the claims

Please amend the claims as follows:

Claims 1 to 10 (cancelled)

11. (previously presented) A method of assembling traffic from a plurality of users for transmission over an ATM connection, said method comprising:

- assembling the plurality of users' traffic into respective mini-cells;
- for each of said plurality of users' traffic, storing information pertaining to a mini-cell length associated with that user's mini-cells; and
- multiplexing the mini-cells into ATM cells.

12. (previously presented) A method as claimed in claim 11, wherein the information pertaining to a mini-cell length associated with a user's mini-cells is derived as an explicit mini-cell length indicator from a connection identifier for that user's mini-cells.

13. (previously presented) A method as claimed in claim 11, wherein the information pertaining to a mini-cell length associated with a user's mini-cells is derived as an implicit mini-cell length indicator by interpreting information contained in a service specific control (SCF) field for that user's mini-cells.

14. (previously presented) A method as claimed in claim 11, wherein the information pertaining to the mini-cell lengths for the plurality of users' traffic is stored at an interface of an ATM network hosting the ATM connection.

15. (previously presented) A method as claimed in claim 14, wherein the interface comprises a look-up table.

16. (previously presented) A method as claimed in claim 15, wherein the step of storing the information pertaining to the mini-cell length associated with a user's mini-

cells comprises storing said mini-cell length indicator at an entry associated with that user in the look-up table.

17. (previously presented) A method as claimed in claim 16, wherein the step of storing the information pertaining to the mini-cell length associated with a user's mini-cells comprises storing a connection identifier for that user's mini-cells at the entry associated with that user in the look-up table.

18. (previously presented) A method as claimed in claim 16, wherein the step of storing the information pertaining to the mini-cell length associated with a user's mini-cells comprises storing information contained in a service specific control (SCF) field for that user's mini-cells at the entry associated with that user in the look-up table.

19. (previously presented) A method as claimed in claim 11, wherein the ATM connection comprises a virtual connection (VC).

20. (previously presented) A method as claimed in claim 19, wherein a plurality of VCs are configured on the ATM connection.

21. (previously presented) A method as claimed in claim 11, wherein the information pertaining to a mini-cell length associated with a user's mini-cells comprises a correspondence between a connection identifier and a mini-cell length indicator for that user.

22. (previously presented) A method as claimed in claim 21, wherein said correspondence is derived from information to be transmitted in a service specific control (SCF) field of that user's mini-cells.

23. (previously presented) A method as claimed in claim 11, wherein a sequence number is provided for a mini-cell.

24. (previously presented) A method as claimed in claim 23, wherein said mini-cell sequence number is contained in a mini-cell start pointer.
25. (previously presented) A method as claimed in claim 24, wherein a mini-cell start pointer is provided in every ATM cell containing mini-cells.
26. (previously presented) A method as claimed in claim 11, wherein a sequence number is provided for each ATM cell containing mini-cells.
27. (previously presented) A method as claimed in claim 26, wherein a mini-cell start pointer is provided in every ATM cell containing mini-cells and the ATM cell sequence number is included in the mini-cell start pointer.
28. (previously presented) A method as claimed in claim 26, wherein the ATM cell sequence number is included in an AUU bit of a header of an ATM cell.
29. (previously presented) A method as claimed in claim 26, wherein the ATM cell sequence number is defined by a single bit.
30. (previously presented) A method as claimed in claim 11, wherein at least one of said users is allocated variable length mini-cells and wherein the stored information pertaining to a mini-cell length associated with that user's mini-cells is updated.
31. (previously presented) A method of transmitting traffic from a plurality of users over an ATM connection, said method comprising:
- assembling the plurality of users' traffic into respective mini-cells;
 - for each of said plurality of traffic users, storing information pertaining to a mini-cell length associated with that user's mini-cells;
 - multiplexing the mini-cells into ATM cells;
 - transmitting the ATM cells over the ATM connection; and,

at an egress of the ATM connection, determining from the stored information the respective mini-cells lengths of said users' mini-cells in order to delineate said mini-cells in each ATM cell received at said egress.

32. (previously presented) A method as claimed in claim 31, wherein the information pertaining to a mini-cell length associated with a user's mini-cells is derived as an explicit mini-cell length indicator from a connection identifier for that user's mini-cells.

33. (previously presented) A method as claimed in claim 31, wherein the information pertaining to a mini-cell length associated with a user's mini-cells is derived as an implicit mini-cell length indicator by interpreting information contained in a service specific control (SCF) field for that user's mini-cells.

34. (previously presented) A method as claimed in claim 31, wherein the information pertaining to the mini-cell lengths for the plurality of users' traffic is stored at an interface of an ATM network hosting the ATM connection.

35. (previously presented) A method as claimed in claim 34, wherein the interface comprises a look-up table.

36. (previously presented) A method as claimed in claim 35, wherein the step of storing the information pertaining to the mini-cell length associated with a user's mini-cells comprises storing said mini-cell length indicator at an entry associated with that user in the look-up table.

37. (previously presented) A method as claimed in claim 36, wherein the step of storing the information pertaining to the mini-cell length associated with a user's mini-cells comprises storing a connection identifier for that user's mini-cells at the entry associated with that user in the look-up table.

38. (previously presented) A method as claimed in claim 36, wherein the step of storing the information pertaining to the mini-cell length associated with a user's mini-cells comprises storing information contained in a service specific control (SCF) field for that user's mini-cells at the entry associated with that user in the look-up table.

39. (previously presented) A method as claimed in claim 34, wherein the stored information pertaining to the mini-cell lengths for the plurality of users' traffic is stored at the interface is updated to accommodate users requiring variable length mini-cells.

40. (previously presented) A method as claimed in claim 39, wherein the stored information at the interface is updated when establishing mini-cell connection set-up.

41. (previously presented) A method as claimed in claim 31, wherein the ATM connection comprises a virtual connection (VC).

42. (previously presented) A method as claimed in claim 41, wherein a plurality of VCs are configured on the ATM connection.

43. (previously presented) A method as claimed in claim 31, wherein the information pertaining to a mini-cell length associated with a user's mini-cells comprises a correspondence between a connection identifier and a mini-cell length indicator for that user.

44. (previously presented) A method as claimed in claim 43, wherein said correspondence is derived from information transmitted in a service specific control (SCF) field of that user's mini-cells.

45. (previously presented) A method as claimed in claim 31, wherein a sequence number is provided for in a mini-cell.

46. (previously presented) A method as claimed in claim 45, wherein said mini-cell sequence number is contained in a mini-cell start pointer.

47. (previously presented) A method as claimed in claim 46, wherein omission or corruption of mini-cells in a sequence is detected from said mini-cell sequence number and said omitted or corrupted mini-cells are selectively retransmitted.

48. (previously presented) A method as claimed in claim 47, wherein the mini-cell sequence number is defined by a single bit.

49. (previously presented) A method as claimed in claim 46, wherein a mini-cell start pointer is provided in every ATM cell containing mini-cells.

50. (previously presented) A method as claimed in claim 31, wherein a sequence number is provided for each ATM cell containing mini-cells.

51. (previously presented) A method as claimed in claim 50, wherein a mini-cell start pointer is provided in every ATM cell containing mini-cells and the ATM cell sequence number is included in the mini-cell start pointer.

52. (previously presented) A method as claimed in claim 50, wherein the ATM cell sequence number is included in an AUU bit of a header of an ATM cell.

53. (previously presented) A method as claimed in claim 50, wherein the ATM cell sequence number is defined by a single bit.

54. (previously presented) A method as claimed in claim 31, wherein at least one of said users is allocated variable length mini-cells and wherein the stored information pertaining to a mini-cell length associated with that user's mini-cells is updated.

55. (previously presented) A method as claimed in claim 31, wherein the stored information pertaining to a mini-cell length associated with a user's mini-cells includes information pertaining to a state of that user's mini-cell connection.

56. (previously presented) A method as claimed in claim 55, wherein said stored information includes information pertaining to any dynamically varying parameters for the user's mini-cell connection.

57. (previously presented) A method as claimed in claim 55, wherein it includes comparing the stored information with information received at the ATM connection egress as a mechanism for detecting errors in a mini-cell connection.

58 to 77. (cancelled)

78. (previously presented) A system for transmitting traffic from a plurality of users over an ATM connection, said system comprising:

- an ATM traffic assembly apparatus for assembling the plurality of users' traffic into respective mini-cells and, for each of said plurality of traffic users, storing information pertaining to a mini-cell length associated with that user's mini-cells;

- a multiplexer for multiplexing the mini-cells into ATM cells and dispatching the ATM cells onto the ATM connection; and,

- means at an egress of the ATM connection for determining from the stored information the respective mini-cells lengths of said users' mini-cells in order to control a means for delineating said mini-cells in each ATM cell received at said egress.

79. (previously presented) A system as claimed in claim 78, wherein the assembly apparatus derives information pertaining to a mini-cell length associated with a user's mini-cells as an explicit mini-cell length indicator from a connection identifier for that user's mini-cells.

80. (previously presented) A system as claimed in claim 78, wherein the assembly apparatus derives information pertaining to a mini-cell length associated with a user's mini-cells as an implicit mini-cell length indicator by interpreting information contained in a service specific control (SCF) field for that user's mini-cells.

81. (previously amended) A system as claimed in claim 78, wherein the assembly apparatus stores the information pertaining to the mini-cell lengths for the plurality of users' traffic at an interface of an ATM network hosting the ATM connection.

82. (previously presented) A system as claimed in claim 81, wherein the interface comprises a look-up table.

83. (previously presented) A system as claimed in claim 82, wherein the assembly apparatus stores the information pertaining to the mini-cell length associated with a user's mini-cells at an entry associated with that user in the look-up table.

84. (previously presented) A system as claimed in claim 83, wherein the assembly apparatus stores a connection identifier for that user's mini-cells at the entry associated with that user in the look-up table.

85. (previously presented) A system as claimed in claim 83, wherein the assembly apparatus stores information contained in a service specific control (SCF) field for that user's mini-cells at the entry associated with that user in the look-up table.

86. (previously presented) A system as claimed in claim 81, wherein the assembly apparatus updates the information pertaining to the mini-cell lengths for the plurality of users' traffic stored at the interface to accommodate users requiring variable length mini-cells.

87. (previously presented) A system as claimed in claim 86, wherein assembly apparatus updates the stored information at the interface when establishing mini-cell connection set-up.

88. (previously presented) A system as claimed in claim 78, wherein the ATM connection comprises a virtual connection (VC).

89. (previously presented) A system as claimed in claim 88, wherein a plurality of VCs are configured on the ATM connection.

90. (previously presented) A system as claimed in claim 78, wherein the assembly apparatus stores information pertaining to a mini-cell length associated with a user's mini-cells comprising a correspondence between a connection identifier and a mini-cell length indicator for that user.

91. (previously presented) A system as claimed in claim 90, wherein said correspondence is derived from information transmitted in a service specific control (SCF) field of that user's mini-cells.

92. (previously presented) A system as claimed in claim 78, wherein the assembly apparatus provides a sequence number in a mini-cell.

93. (previously presented) A system as claimed in claim 92, wherein said assembly apparatus encapsulates the mini-cell sequence number in a mini-cell start pointer.

94. (previously presented) A system as claimed in claim 93, wherein the means at the ATM connection egress detects omission or corruption of mini-cells in a sequence said mini-cell sequence number and controls said assembly apparatus to selectively retransmit said omitted or corrupted mini-cells.

95. (previously presented) A system as claimed in claim 94, wherein the mini-cell sequence number is defined by a single bit.

96. (previously presented) A system as claimed in claim 93, wherein the assembly apparatus provides a mini-cell start pointer in every ATM cell containing mini-cells.

97. (previously presented) A system as claimed in claim 78, wherein the assembly apparatus provides a sequence number for each ATM cell containing mini-cells.

98. (previously presented) A system as claimed in claim 97, wherein the assembly apparatus provides a mini-cell start pointer in every ATM cell containing mini-cells and includes the ATM cell sequence number in the mini-cell start pointer.

99. (previously presented) A system as claimed in claim 97, wherein the assembly apparatus includes the ATM cell sequence number in an AUU bit of a header of an ATM cell.

100. (previously presented) A system as claimed in claim 97, wherein the ATM cell sequence number is defined by a single bit.

101. (previously presented) A system as claimed in claim 78, wherein the assembly apparatus allocates at least one of said users with variable length mini-cells and wherein the stored information pertaining to a mini-cell length associated with that user's mini-cells is updated.

102. (previously presented) A system as claimed in claim 78, wherein the assembly apparatus includes information pertaining to a state of a user's mini-cell connection in the stored information pertaining to a mini-cell length associated with that user's mini-cells includes.

103. (previously presented) A system as claimed in claim 102, wherein said stored information includes information pertaining to any dynamically varying parameters for the user's mini-cell connection.

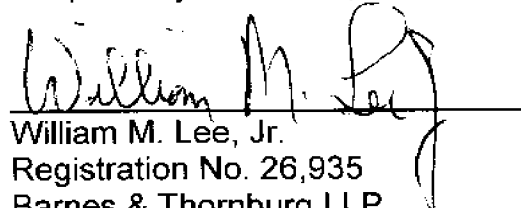
104. (previously presented) A system as claimed in claim 102, wherein the means at the ATM connection egress is arranged to compare the stored information with information received at said ATM connection egress as a mechanism for detecting errors in a mini-cell connection.

Remarks.

Claims 58 to 61 and claims 63 to 77 have been cancelled without prejudice. Thus, claims 11 to 57 and 78 to 104 remain in the application. The Examiner has acknowledged that these claims are allowable. Consequently, it is believed that this application is now fully in condition for allowance. Such action is solicited.

July 22, 2008

Respectfully submitted,

A handwritten signature in black ink, appearing to read "William M. Lee, Jr.", is written over a horizontal line. The signature is stylized with a large, looped "L" and a trailing flourish.

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